



# ACTIVITY PLAN



**Grades: 3, 4, 5**

**Subject: Electricity**

**Topic: Electric Circuits**

**Lesson: Paper Circuits**

## Objectives:

- Explain circuits and conductivity
- Explain why copper is used to conduct electricity

## Materials:

- 1 spool of copper tape
- 2 2032 coin-cell batteries
- LEDs (2 per student)
- Construction paper
- Tape
- Paper clips
- Scissors
- Colored pencils or markers

## Instructions:

1. Cut two long strips of copper tape. Remove the paper backing from the tape, and place them near the edge of a piece of paper, parallel to each other. The strips should be about half an inch apart, and one strip should not go all the way to the edge of the paper.
2. Poke the LED legs through so they are on the side with the copper tape. Carefully bend the legs of the LED, and use Scotch tape to attach each lead to a strip of the copper tape. Only the LED should be visible on the other side of the paper. Important: The longer leg should be on the outer strip of copper tape (the one closer to the edge of the paper), and the shorter leg should be on the inner strip.
3. Place the coin cell battery on top of the inner piece of copper tape (the one farther from the edge). The writing on the coin cell (the side with the "+" symbol) should be facing up
4. Fold over the corner of the piece of paper so the second strip of copper tape contacts the top of the battery. This should cause your LED to light up. If your LED does not light up, you probably have either the battery or the LED leads backwards. Try flipping one of them around, then try again. If your LED still does not light up, try pressing down harder on the battery, and press down on the LED legs. The battery and LED leads must be in good contact with the copper tape to complete a circuit and cause the LED to light up.
5. Use a paper clip or a binder clip to hold the battery in place so the LED will stay lit.
6. To add more LEDs, simply tape them down the same way you taped down your first LED



## Notes:

**Encourage students to be creative and conduct this experiment step-by-step with the whole class to ensure everyone is together**